

221113-H: SUPPLEMENTAL BASIC PIPING MATERIALS AND METHODS

Related Sections

Basis Guideline: [221113](#) - "Basic Piping Materials and Methods"

For an explanation of the use of these guidelines, see "[Design Guidelines for UMHHC Facilities](#)"

Included as part of this UMHHC guideline section are the details described within the following UM Master Specification sections:

[MS221113](#) – "Basic Piping Materials and Methods"

The UM Master Specifications may be used as a reference and/or basis, but the A/E is completely responsible for contract specifications (meeting the intent of the UMHHC Guidelines and Preferred Manufacturers List) that are used in UMHHC projects.

UMH Standard Details:

[D221113H-1](#) "Pipe Sleeve Thru Floor"

[D221113H-2](#) "Pipe Sleeve Thru Interior Wall"

[D221113H-3](#) "Typical Main Pipe Tapping Detail"

[D 15515 002](#) "Automatic Water System Air Vent Detail"

[D 15830 001](#) "Draw-Thru Coil Condensate Drain"

[D 15830 002](#) "Blow-Thru Coil Condensate Drain"

[D 15830 101](#) "Duct-Mounted Reheat Coil – Hot Water Heating Piping Connections Detail"

General

Design drawings shall indicate source and termination of all plumbing lines and sizes.

Special Jointing Methods

In general, grooved systems shall be limited to new piping installations 2-1/2" & larger for domestic cold water, heating hot water, chilled water & condenser water systems in non-concealed locations (i.e. grooved systems shall not be installed within enclosed chases, shafts or above drywall ceilings). Grooved piping systems shall **not** be allowed on domestic hot water, high temperature hot water or hot water return systems.

Where allowed by hospital guidelines, the AE shall identify the use of grooved couplings as a contractor's option in the bid documents (rather than as a value engineering credit during the construction phase).

The use of copper "press to connect" jointing systems (i.e. Propress) shall be considered as an alternative to traditional jointing means only for domestic cold water, chilled water, heating hot water & condenser water system installations 4" and smaller in non-concealed locations (i.e. press to connect systems shall not be installed within enclosed chases, shafts or above drywall ceilings). Press to connect systems shall **not** be allowed in domestic hot water, high temperature hot water or hot water return systems.

Grooved systems and press to connect systems are allowed for use on domestic hot water/ high temp HW/ HW return systems when used in facilities outside the City of Ann Arbor water distribution. AE shall discuss applicability with FPD engineers.

Storm, Drainage and Vent Piping Requirements

Minimum sanitary pipe size shall be 2"

Underground waste and vent lines shall be 3" minimum.

Invert elevations of underground lines must be clearly indicated, especially at crossovers.

All underground storm, waste and vent piping in Inpatient Facilities shall be service weight cast iron with no-hub joints. Sch 40 PVC DWV piping is allowable for underground installations of these piping systems only in Outpatient Facilities.

Sch 40 PVC piping is allowed on sanitary and vent piping within Outpatient Facilities that are 2 stories or less, where allowed by code. Outpatient Facilities 3 stories or greater are allowed to use cast iron risers with sch 40 PVC laterals for all sanitary & vent piping.

All sanitary waste piping serving kitchen areas that utilize carbonated beverage dispensing and dialysis unit areas shall be DWV grade PVC with solvent weld joints.

All sanitary waste piping serving removed plumbing fixtures shall be removed back to the next active branch and capped. For underground, below slab piping where piping removal would be disruptive and costly, disconnect and cap waste piping at each end (at the connection to the active main as well as at the point of removal) and abandon the deactivated length of underground piping in place. Do not leave dead legs in the sanitary system.

Water Service

The AE is responsible for specifying an above grade restrained transition fitting at the point of entrance inside the building for all water service leads utilizing underground, unrestrained mechanical joint fittings from the utility main to the building. The use of "Mega-Lug" restrained joints or a field-applied threaded rod restraining system is required.

Special Piping Systems

Above ground acid resistant drainage pipe for hazardous waste and vent systems like blood gas analyzers and blood analyzer rooms shall be schedule 40 corrosion resistant polypropylene. Below ground installations shall utilize schedule 80 corrosion resistant polypropylene.

Fuel oil piping shall utilize an engineered double wall piping system, utilizing a steel inner pipe with a PVC outer pipe and a leak detection system in the annular space.

All deionized water and reverse osmosis water distribution systems shall utilize a fusion weld joint system, compatible with the piping system. Mechanical joints are not allowed.

All water treatment systems for use in dialysis shall be supplied and installed by a FDA 510K registered company.

AE shall consider the use of polypropylene piping (i.e. Aquatherm) on domestic water and HVAC systems where it meets the performance requirements and is cost effective. AE shall review proposed use with FPD engineers.